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# United States Patent [19]

# Cragun

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[54]	TOUCH SCREEN APPARATUS WITH TACTILE INFORMATION				
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[51] [52]	U.S. Cl	•			
[58]					
[56]	References Cited				
U.S. PATENT DOCUMENTS					
	4,752,772 4,760,245 4,893,115 5,185,515 5,222,895 5,244,288	6/1993 9/1993	Litt et al.       340/712         Fukaya       235/379         Blanchard       341/23 X         Nishibe       235/382         Fricke       434/115 X         Nagaoka et al.       434/115 X		
FOREIGN PATENT DOCUMENTS					
	0010387 1272868	1/1985 12/1986	Japan       235/379         Japan       235/380		

0319784	12/1989	Japan	434/113
0496894	3/1992	Japan	235/380

#### OTHER PUBLICATIONS

Japanese Patent Appl., Abstract, Imamichi et al., Appln. No. 62-186359, Aug. 14, 1987, "Cash Automatic Transaction Processing Unit".

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## [57] ABSTRACT

A touch screen apparatus with tactile feedback is disclosed. Tactile information, such as Braille or other symbolic representations, is integrally connected to an area on the touch screen surface. This tactile information can be molded into the touch screen surface as part of its initial manufacturing process, or can be added later by making the tactile information our of epoxy or or by placing a plastic film containing the tactile information over the touch screen surface. The touch screen display can be part of a desktop or laptop computer, can be part of a computer system in a public information kiosk or automated teller machine application, or can be included as an information panel in stereo equipment, transportation equipment, etc.

## 11 Claims, 3 Drawing Sheets

